

RECEIVED

OCT 25 2002

TECH CENTER 1600/2900



1600

RAW SEQUENCE LISTING

DATE: 10/21/2002

PATENT APPLICATION: US/09/249,011A

TIME: 18:37:54

Input Set : N:\Crf4\Refhold\I249011A.raw

Output Set: N:\CRF4\10212002\I249011A.raw

ENTERED

```

1 <110> APPLICANT: CO, MAN SUNG
2   VASQUEZ, MAXIMILIANO
3   CARRENO, BEATRIZ
4   CELNIKER, ABBIE CHERYL
5   COLLINS, MARY
6   GOLDMAN, SAMUEL
7   GRAY, GARY S.
8   KNIGHT, ANDREA
9   O'HARA, DENISE
10  RUP, BONITA
11  VELDMAN, GEERTRUIDA M.
12 <120> TITLE OF INVENTION: HUMANIZED IMMUNOGLOBULIN REACTIVE WITH B7-2 AND METHODS
13   OF TREATMENT THEREWITH
14 <130> FILE REFERENCE: 08702.0081-00000
C--> 15 <140> CURRENT APPLICATION NUMBER: US/09/249,011A
16 <141> CURRENT FILING DATE: 1999-02-12
17 <160> NUMBER OF SEQ ID NOS: 24
18 <170> SOFTWARE: PatentIn Ver. 2.1
20 <210> SEQ ID NO: 1
21 <211> LENGTH: 405
22 <212> TYPE: DNA
23 <213> ORGANISM: Murine sp.
24 <220> FEATURE:
25 <221> NAME/KEY: CDS
26 <222> LOCATION: (1)..(405)
27 <223> OTHER INFORMATION: Anti-B7-2 heavy chain
28 <400> SEQUENCE: 1
29   atg ggt tgg aac tgt atc atc ttc ttt ctg gtt aca aca gct aca ggt   48
30   Met Gly Trp Asn Cys Ile Ile Phe Phe Leu Val Thr Thr Ala Thr Gly
31     1             5             10             15
32   gtg cac tcc cag gtc cag ctg cag cag tct ggg cct gag ctg gtg agg   96
33   Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg
34             20             25             30
35   cct ggg gaa tca gtg aag att tcc tgc aag ggt tcc ggc tac aca ttc   144
36   Pro Gly Glu Ser Val Lys Ile Ser Cys Lys Gly Ser Gly Tyr Thr Phe
37     35             40             45
38   act gat tat gct ata cag tgg gtg aag cag agt cat gca aag agt cta   192
39   Thr Asp Tyr Ala Ile Gln Trp Val Lys Gln Ser His Ala Lys Ser Leu
40     50             55             60
41   gag tgg att gga gtt att aat att tac tat gat aat aca aac tac aac   240
42   Glu Trp Ile Gly Val Ile Asn Ile Tyr Tyr Asp Asn Thr Asn Tyr Asn
43     65             70             75             80
44   cag aag ttt aag ggc aag gcc aca atg act gta gac aaa tcc tcc agc   288

```

RAW SEQUENCE LISTING

DATE: 10/21/2002

PATENT APPLICATION: US/09/249,011A

TIME: 18:37:54

Input Set : N:\Crif4\Refhold\I249011A.raw

Output Set: N:\CRF4\10212002\I249011A.raw

```

45      Gln Lys Phe Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser
46              85              90              95
47      aca gcc tat atg gaa ctt gcc aga ttg aca tct gag gat tct gcc atc 336
48      Thr Ala Tyr Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Ile
49              100              105              110
50      tat tac tgt gca aga gcg gcc tgg tat atg gac tac tgg ggt caa gga 384
51      Tyr Tyr Cys Ala Arg Ala Ala Trp Tyr Met Asp Tyr Trp Gly Gln Gly
52              115              120              125
53      acc tca gtc acc gtc tcc tca 405
54      Thr Ser Val Thr Val Ser Ser
55              130              135
57 <210> SEQ ID NO: 2
58 <211> LENGTH: 135
59 <212> TYPE: PRT
60 <213> ORGANISM: Murine sp.
61 <220> FEATURE:
62 <223> OTHER INFORMATION: Anti-B7-2 heavy chain
63 <400> SEQUENCE: 2
64      Met Gly Trp Asn Cys Ile Ile Phe Phe Leu Val Thr Thr Ala Thr Gly
65              1              5              10              15
66      Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Pro Glu Leu Val Arg
67              20              25              30
68      Pro Gly Glu Ser Val Lys Ile Ser Cys Lys Gly Ser Gly Tyr Thr Phe
69              35              40              45
70      Thr Asp Tyr Ala Ile Gln Trp Val Lys Gln Ser His Ala Lys Ser Leu
71              50              55              60
72      Glu Trp Ile Gly Val Ile Asn Ile Tyr Tyr Asp Asn Thr Asn Tyr Asn
73              65              70              75              80
74      Gln Lys Phe Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Ser Ser
75              85              90              95
76      Thr Ala Tyr Met Glu Leu Ala Arg Leu Thr Ser Glu Asp Ser Ala Ile
77              100              105              110
78      Tyr Tyr Cys Ala Arg Ala Ala Trp Tyr Met Asp Tyr Trp Gly Gln Gly
79              115              120              125
80      Thr Ser Val Thr Val Ser Ser
81              130              135
83 <210> SEQ ID NO: 3
84 <211> LENGTH: 396
85 <212> TYPE: DNA
86 <213> ORGANISM: Murine sp.
87 <220> FEATURE:
88 <221> NAME/KEY: CDS
89 <222> LOCATION: (1)..(396)
90 <223> OTHER INFORMATION: Anti-B7-2 light chain
91 <400> SEQUENCE: 3
92      atg gat tca cag gcc cag gtt ctt ata ttg ctg ctg cta tgg gta tct 48
93      Met Asp Ser Gln Ala Gln Val Leu Ile Leu Leu Leu Trp Val Ser
94              1              5              10              15
95      ggt acc tgt ggg gac att gtg ctg tca cag tct cca tcc tcc ctg gct 96

```

RAW SEQUENCE LISTING

DATE: 10/21/2002

PATENT APPLICATION: US/09/249,011A

TIME: 18:37:54

Input Set : N:\Crf4\Refhold\I249011A.raw

Output Set: N:\CRF4\10212002\I249011A.raw

```

96      Gly Thr Cys Gly Asp Ile Val Leu Ser Gln Ser Pro Ser Ser Leu Ala
97              20              25              30
98      gtg tca gca gga gag aag gtc act atg agc tgc aaa tcc agt cag agt   144
99      Val Ser Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser
100             35             40             45
101      ctg ctc aac agt aga acc cga gag aac tac ttg gct tgg tac cag cag   192
102      Leu Leu Asn Ser Arg Thr Arg Glu Asn Tyr Leu Ala Trp Tyr Gln Gln
103             50             55             60
104      aaa cca ggg cag tct cct aaa ctg ctg atc tac tgg gca tcc act agg   240
105      Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg
106             65             70             75             80
107      gaa tct ggg gtc cct gat cgc ttc aca ggc agt gga tct ggg aca gat   288
108      Glu Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp
109             85             90             95
110      ttc act ctc acc atc agc agt gtg cag gct gaa gac ctg gca gtt tat   336
111      Phe Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr
112             100            105            110
113      tac tgc acg caa tct tat aat ctt tac acg ttc gga ggg ggg acc aag   384
114      Tyr Cys Thr Gln Ser Tyr Asn Leu Tyr Thr Phe Gly Gly Gly Thr Lys
115             115            120            125
116      ctg gaa ata aaa                                           396
117      Leu Glu Ile Lys
118             130
120 <210> SEQ ID NO: 4
121 <211> LENGTH: 132
122 <212> TYPE: PRT
123 <213> ORGANISM: Murine sp.
124 <220> FEATURE:
125 <223> OTHER INFORMATION: Anti-B7-2 light chain
126 <400> SEQUENCE: 4
127      Met Asp Ser Gln Ala Gln Val Leu Ile Leu Leu Leu Leu Trp Val Ser
128             1             5             10             15
129      Gly Thr Cys Gly Asp Ile Val Leu Ser Gln Ser Pro Ser Ser Leu Ala
130             20             25             30
131      Val Ser Ala Gly Glu Lys Val Thr Met Ser Cys Lys Ser Ser Gln Ser
132             35             40             45
133      Leu Leu Asn Ser Arg Thr Arg Glu Asn Tyr Leu Ala Trp Tyr Gln Gln
134             50             55             60
135      Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg
136             65             70             75             80
137      Glu Ser Gly Val Pro Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp
138             85             90             95
139      Phe Thr Leu Thr Ile Ser Ser Val Gln Ala Glu Asp Leu Ala Val Tyr
140             100            105            110
141      Tyr Cys Thr Gln Ser Tyr Asn Leu Tyr Thr Phe Gly Gly Gly Thr Lys
142             115            120            125
143      Leu Glu Ile Lys
144             130
146 <210> SEQ ID NO: 5

```

RAW SEQUENCE LISTING

DATE: 10/21/2002

PATENT APPLICATION: US/09/249,011A

TIME: 18:37:54

Input Set : N:\Crf4\Refhold\I249011A.raw

Output Set: N:\CRF4\10212002\I249011A.raw

```

147 <211> LENGTH: 405
148 <212> TYPE: DNA
149 <213> ORGANISM: Artificial Sequence
150 <220> FEATURE:
151 <223> OTHER INFORMATION: Description of Artificial Sequence: Humanized
152     murine anti-human B7-2 heavy chain
153 <220> FEATURE:
154 <221> NAME/KEY: CDS
155 <222> LOCATION: (1)..(405)
156 <400> SEQUENCE: 5
157     atg ggt tgg aac tgt atc atc ttc ttt ctg gtt acc aca gct aca ggt      48
158     Met Gly Trp Asn Cys Ile Ile Phe Phe Leu Val Thr Thr Ala Thr Gly
159         1             5             10             15
160     gtg cac tcc cag gtc cag ctg gtg cag tct ggg gct gag gtg aag aag      96
161     Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
162         20             25             30
163     cct ggg agc tca gtg aag gtg tcc tgc aaa gct tcc ggc tac aca ttc      144
164     Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
165         35             40             45
166     act gat tat gct ata cag tgg gtg aga cag gct cct gga cag ggc ctc      192
167     Thr Asp Tyr Ala Ile Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
168         50             55             60
169     gag tgg att gga gtt att aat att tac tat gat aat aca aac tac aac      240
170     Glu Trp Ile Gly Val Ile Asn Ile Tyr Tyr Asp Asn Thr Asn Tyr Asn
171         65             70             75             80
172     cag aag ttt aag ggc aag gcc aca atg act gta gac aag tgc acg agc      288
173     Gln Lys Phe Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Thr Ser
174         85             90             95
175     aca gcc tat atg gaa ctt agt tct ttg aga tct gag gat acg gcc gtt      336
176     Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
177         100            105            110
178     tat tac tgt gca aga gcg gcc tgg tat atg gac tac tgg ggt caa ggt      384
179     Tyr Tyr Cys Ala Arg Ala Ala Trp Tyr Met Asp Tyr Trp Gly Gln Gly
180         115            120            125
181     acc ctt gtc acc gtc tcc tca                                     405
182     Thr Leu Val Thr Val Ser Ser
183         130            135
185 <210> SEQ ID NO: 6
186 <211> LENGTH: 135
187 <212> TYPE: PRT
188 <213> ORGANISM: Artificial Sequence
189 <220> FEATURE:
190 <223> OTHER INFORMATION: Description of Artificial Sequence: Humanized
191     murine anti-human B7-2 heavy chain
192 <400> SEQUENCE: 6
193     Met Gly Trp Asn Cys Ile Ile Phe Phe Leu Val Thr Thr Ala Thr Gly
194         1             5             10             15
195     Val His Ser Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys
196         20             25             30

```

RAW SEQUENCE LISTING

DATE: 10/21/2002

PATENT APPLICATION: US/09/249,011A

TIME: 18:37:54

Input Set : N:\Crf4\Refhold\I249011A.raw

Output Set: N:\CRF4\10212002\I249011A.raw

```

197   Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe
198               35                     40                     45
199   Thr Asp Tyr Ala Ile Gln Trp Val Arg Gln Ala Pro Gly Gln Gly Leu
200               50                     55                     60
201   Glu Trp Ile Gly Val Ile Asn Ile Tyr Tyr Asp Asn Thr Asn Tyr Asn
202               65                     70                     75                     80
203   Gln Lys Phe Lys Gly Lys Ala Thr Met Thr Val Asp Lys Ser Thr Ser
204               85                     90                     95
205   Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val
206               100                    105                    110
207   Tyr Tyr Cys Ala Arg Ala Ala Trp Tyr Met Asp Tyr Trp Gly Gln Gly
208               115                    120                    125
209   Thr Leu Val Thr Val Ser Ser
210               130                    135
212 <210> SEQ ID NO: 7
213 <211> LENGTH: 396
214 <212> TYPE: DNA
215 <213> ORGANISM: Artificial Sequence
216 <220> FEATURE:
217 <223> OTHER INFORMATION: Description of Artificial Sequence: Humanized
218   murine anti-human B7-2 light chain
219 <220> FEATURE:
220 <221> NAME/KEY: CDS
221 <222> LOCATION: (1)..(396)
222 <400> SEQUENCE: 7
223   atg gat tca cag gcc cag gtt ctt ata ttg ctg ctg cta tgg gta tct      48
224   Met Asp Ser Gln Ala Gln Val Leu Ile Leu Leu Leu Leu Trp Val Ser
225       1                     5                     10                     15
226   ggc acc tgt ggg gac att gtg ctg aca cag tct cca gat tcc ctg gct      96
227   Gly Thr Cys Gly Asp Ile Val Leu Thr Gln Ser Pro Asp Ser Leu Ala
228               20                     25                     30
229   gta agc tta gga gag agg gcc act att agc tgc aaa tcc agt cag agt      144
230   Val Ser Leu Gly Glu Arg Ala Thr Ile Ser Cys Lys Ser Ser Gln Ser
231               35                     40                     45
232   ctg ctc aac agt aga acc cga gag aac tac ttg gct tgg tac cag cag      192
233   Leu Leu Asn Ser Arg Thr Arg Glu Asn Tyr Leu Ala Trp Tyr Gln Gln
234               50                     55                     60
235   aaa cca ggg cag cct cct aaa ctg ctg atc tac tgg gca tcc act agg      240
236   Lys Pro Gly Gln Pro Pro Lys Leu Leu Ile Tyr Trp Ala Ser Thr Arg
237               65                     70                     75                     80
238   gaa tct ggg gtc cct gat cgc ttc agt ggc agt gga tct ggg aca gat      288
239   Glu Ser Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp
240               85                     90                     95
241   ttc act ctc acc atc agc agt ctg cag gct gaa gac gtg gca gtt tat      336
242   Phe Thr Leu Thr Ile Ser Ser Leu Gln Ala Glu Asp Val Ala Val Tyr
243               100                    105                    110
244   tac tgc acg caa tct tat aat ctt tac acg ttc gga cag ggg acc aag      384
245   Tyr Cys Thr Gln Ser Tyr Asn Leu Tyr Thr Phe Gly Gln Gly Thr Lys
246               115                    120                    125

```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 10/21/2002
PATENT APPLICATION: US/09/249,011A TIME: 18:37:55

Input Set : N:\Crf4\Refhold\I249011A.raw
Output Set: N:\CRF4\10212002\I249011A.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 12

VERIFICATION SUMMARY

DATE: 10/21/2002

PATENT APPLICATION: US/09/249,011A

TIME: 18:37:55

Input Set : N:\Crf4\Refhold\I249011A.raw

Output Set: N:\CRF4\10212002\I249011A.raw

L:15 M:270 C: Current Application Number differs, Wrong Format

L:635 M:361 W: Invalid Split Codon, Sequence data for SEQ ID#: 23